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ABSTRACT

A method of analyzing well log data from thinly bedded reservoirs to obtain estimates of hydrocarbon pore volume. In the method, a model of the reservoir is established for an interval that is to be analyzed. Within the analysis interval, a set of bed types is identified consisting of sandstone beds and shale beds. For each bed type, parameter values are assigned and calculations are made of the theoretical log response of each bed type. The estimated log responses are compared to measured log responses to determine consistency. Based upon the model, an uncertainty analysis is made using a Monte Carlo technique for inversion of the model. The result is an estimate of the hydrocarbon pore volume of the thinly bedded reservoir interval with distribution statistics representing the expected value and the uncertainty in the estimate.

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